Suggested order of teaching – HL

This is a planning document that is meant to be amended. The dates are not fixed and should be adapted to fit the calendar provided by your school.

Chapters marked Core and SL are included in the Mathematics for the IB Diploma: Analysis and approaches SL Student Book, and chapters marked HL are included in the Mathematics for the IB Diploma: Analysis and approaches HL Student Book.

Year 1

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| **Wk** | **Unit** | **Topics** | **Student books chapter(s)** | **T&L resource(s)** |
| 1 | 1 | Standard Form | 1 (Core) | Large numbers Task |
| 2 | 1 | Arithmetic S&S, Geometric S&S, Applications | 2 (Core), 13 (SL) | Fibonacci PP, TED talk |
| 3 | 1 | Exponents & Logs, Absolute value | 1 (Core), 12 (SL) | Absolute value Task |
| 4 | 1 | Binomial theorem | 13 (SL) | Binomial expansions Task |
| 5 | 1 | Partial fractions | 2 (HL) |  |
| 6 | 1 | Systems of equations | 2(HL) |  |
| 7 | 1 | Complex numbers, Polar form | 4 (HL) |  |
| 8 | 1 | De Moivre’s theorem, proof by induction | 5 (HL) | Proof by induction PP |
| 9 |  |  |  |  |
| 10 | 2 | Straight line geometry | 3, 4 (Core) |  |
| 11 | 2 | Function notation, Graphs of functions (Tech) | 3, 4 (Core) |  |
| 12 | 2 | Composite, Inverse functions, odd/even | 14 (SL) | Composite functions PP |
| 13 | 2 | Quadratics, Polynomial division | 6 (HL) | Functions test |
| 14 | 2 | Rational functions, asymptotes | 7 (HL) | Oblique asymptotes PP |
| 15 | 2 | Absolute value | 7 (HL) |  |
| 16 | 2 | Logs and exponential graphs | 7 (HL) |  |
| 17 | 2 | Transforming functions | 7 (HL) | Transforming functions Task |
| 18 |  |  |  |  |
| 19 | 3 | Area & Volume | 5 (Core) |  |
| 20 | 3 | Sine & Cosine rules, Applications | 5 (Core) | Proofs of sine and cosine rules PP |
| 21 | 3 | Unit circle, Arc, Area of sectors, Radians | 18 (SL) | Unit circle Task |
| 22 | 3 | Trigonometric identities, inverse trig | 3 (HL) | Do you speak Babylonian/Radians PP |
| 23 | 3 | Trigonometric graphs and equations | 3 (HL) | Transforming functions Task |
| 24 | 3 | Vectors | 8 (HL) | Introduction to vectors PP |
| 25 | 3 | Vectors | 8 (HL) |  |
| 26 | 3 | Vectors | 8 (HL) |  |
| 27 |  |  |  |  |
| 28 | 4 | Data sampling | 6 (Core) | Sampling PP |
| 29 | 4 | Histograms, Cumulative Freq. | 6 (Core) |  |
| 30 | 4 | Measures of central tendency, variance | 6 (Core), 19 (SL) | Variance PP |
| 31 | 4 | Linear correlation | 6 (Core), 19 (SL) | *r*-value PP |
| 32 | 4 | Probability | 7 (Core) |  |
| 33 | 4 | Binomial Distribution | 8 (Core) |  |
| 34 | 4 | Normal Distribution | 8 (Core) | Spreadsheet activity |
| 35 | 4 | Standardization of normal variables | 19 (SL) | Spreadsheet activity |
| 36 |  | Exams & Exploration |  |  |

Year 2

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| **Wk** | **Unit** | **Topics** | **Student books chapter(s)** | **T&L resource(s)** |
| 1 |  | Exploration |  |  |
| 2 | 4 | Bayes’ theorem | 9 (HL) | Monty Hall Task |
| 3 | 4 | Discrete/Continuous Random Variables | 9 (HL) |  |
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| 5 |  |  |  |  |
| 6 | 5 | Limits, Rate of change | 9 (Core) | First principles PP |
| 7 | 5 | Increasing/Decreasing, tangents, normals | 9 (Core) |  |
| 8 | 5 | Chain, Product, Quotient rules | 20 (SL) |  |
| 9 | 5 | The second derivative, max/min points | 20 (SL) |  |
| 10 | 5 | Optimization | 20 (SL) |  |
| 11 | 5 | Kinematics | 21 (SL) | Kinematics PP |
| 12 | 5 | L’Hôpital’s rule, implicit differentiation | 10 (HL) |  |
| 13 | 5 | Derivatives of trig | 10 (HL) |  |
| 14 | 5 | Introduction to integration | 10 (HL) |  |
| 15 | 5 | Integration by parts, substitution | 10 (HL) | Integration Test |
| 16 | 5 | Area under curve, volume of revolution | 10 (HL) | Volume of revolution PP, Gabriel’s Horn PP |
| 17 | 5 | Differential equations | 11 (HL) |  |
| 18 | 5 | Maclaurin series | 11 (HL) |  |
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